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EXAMINER	
ZHANG, FAN	

ART UNIT	PAPER NUMBER
2625	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/579,729	Applicant(s) HIGASHIMURA ET AL.	
	Examiner FAN ZHANG	Art Unit 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicants' remarks received on January 20, 2010 have been fully acknowledged. Applicant's amendments to the specification, the abstract, and the drawings have been accepted. Applicant's arguments with regard to amended claim 1 have not been found persuasive. Applicant's arguments with regard to claim 13 are moot in view of a new ground of rejection necessitated by the corresponding amendments. Currently claims 1-18 remain rejected.

With respect to amended claim 1, Applicant argues that Nishio reference fails to teach: "after the rasterizing unit starts to rasterize the plurality of pieces of sub-data and prior to the rasterizing unit completing the rasterizing of all of the plurality of pieces of sub-data, the determination unit determines whether or not there is a necessity for the print data obtainment unit to further obtain a same plurality of pieces of sub-data, in order for the rasterizing unit to complete the rasterizing of all of the pieces of sub-data." Examiner respectfully disagrees. As prescribed in col 16, lines 9-21 and 57-67, determination on unnecessarily transferring/obtaining repeated data is not performed until "a print command is issued as a trigger" or "image data formed in the band memory A is outputted to a printer", which occurs after rasterizing starts; and it is obviously prior to completion of rasterization since data would not be analyzed once rasterizing completes.

Response to Amendments

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-6 and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al (US Pub: 2004/0066530) and in further view of Nishio (US Patent: 6,292,202) and Okigami (US Patent: 6,788,427).**

Regarding claim 1 (currently amended), Wu et al teach: A printing apparatus that receives a print instruction from a print instruction apparatus via a communication interface connecting said printing apparatus and the print instruction apparatus, obtain, from the print instruction apparatus, print data including a plurality of pieces of sub-data, and prints the obtained print data [abstract, fig. 2], said printing apparatus comprising: a print data obtainment unit operable to obtain the plurality of pieces of sub-data separately from the print instruction apparatus [p0047]; a rasterizing unit operable to rasterize each of the plurality of pieces of sub-data obtained by said print data obtainment unit [p0008, p0010]; a determination unit operable to determine whether or not there is necessity of further obtaining of the sub-data, by said data obtainment unit, in order to complete printing of the print data [fig. 11: steps 1104, 1108]; and a notification unit operable to notify a result of the determination, to a print instruction

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apparatus which issues the print instruction, when the determination is made that there is no necessity [fig. 11: step 1108/No, 1109].

Wu et al do not emphasize not to obtain already obtained/redundant sub-data. In the same field of endeavor, Nishio teaches: after the rasterizing unit starts to rasterize the plurality of pieces of sub-data and prior to the rasterizing unit completing the rasterizing of all of the plurality of pieces of sub-data, a determination unit operable to determine whether or not there is a necessity for said print data obtainment unit to further obtain a same plurality of pieces of sub-data, in order to said rasterizing unit to complete the rasterizing of all of the plurality of pieces of sub-data, the same plurality of pieces of sub-data being identical to the plurality of pieces of sub-data obtained by said print data obtainment unit [col 16: lines 6-21, 57-67]. Preventing transferring of redundant data has been well practiced in the art as prescribed by Nishio. Therefore, it would have been obvious for an ordinary skilled in the art to combine the teaching of Wu et al and Nishio to prevent re-transfer obtained data for improving image output control speed.

Although Nishio does not explicitly prescribe notifying the determination to the print instruction apparatus, such notification would have been inherent feature of Nishio's teaching or the repeated data transmission would not have been prevented. Nevertheless, in the same field of endeavor, Okigami teaches: a determination unit operable to determine whether or not there is a necessity for said print data obtainment unit to further obtain a same plurality of pieces of sub-data, in order to said rasterizing unit to complete the rasterizing of all of the plurality of pieces of sub-data, the same

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plurality of pieces of sub-data being identical to the plurality of pieces of sub-data obtained by said print data obtainment unit [col 7: lines 49-60]; a notification unit operable to notify a result of the determination by said determination unit to the print instruction apparatus, the result of the determination being notified to the print instruction apparatus when said determination unit determines that there is no necessity to further obtain the same plurality of pieces of sub-data [abstract, col 2: lines 8-30]. Therefore, it would have been obvious for an ordinary skilled in the art to combine the teaching of all to send notification or warning to a terminal device regarding repeated data for preventing data transmission redundancy.

Regarding claim 2 (currently amended), the rationale applied to the rejection of claim 1 has been incorporated herein. Wu et al further teach: The printing apparatus according to claim 1, wherein the print data includes one piece of parent sub-data and one or more pieces of child sub-data referred to by the one piece of parent sub-data, wherein said print data obtainment unit is operable to obtain the one piece of parent sub-data prior to obtaining the one or more pieces of child sub-data, and wherein said determination unit is operable to determine whether or not there is the necessity regarding the one or more pieces of child sub-data referred to by the obtained one piece of parent sub-data [p0046-p0051].

Regarding claim 3 (currently amended), the rationale applied to the rejection of claim 2 has been incorporated herein. Wu et al further teach: The printing apparatus

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according to claim 2, wherein said determination unit is operable to determine that there is no necessity, when the one of more pieces of child sub-data obtained by said print data obtainment unit is referred to by only one part in the one piece of parent sub-data [fig. 6: step 609/No, p0054-p0058 (As illustrated in fig. 7, each management number refers to an unique element and no repeated acquisition is necessary or indicated if an element has been referenced by HTML document data page.)].

Regarding claim 4 (currently amended), the rationale applied to the rejection of claim 2 has been incorporated herein. Wu et al further teach: The printing apparatus according to claim 2, wherein said determination unit is operable to determine that there is no necessity, when the one of more pieces of child sub-data obtained by said print data obtainment unit is not further referred to by the one piece of parent sub-data [p0051 (when all the elements referred to by HTML/parent sub-data are found, printing is performed and no necessity of obtaining any data.)].

Regarding claim 5 (currently amended), the rationale applied to the rejection of claim 2 has been incorporated herein. Wu et al further teach: The printing apparatus according to claim 2, wherein the one or more pieces of child sub-data referred to by the one piece of parent sub-data includes grand-child sub-data referred to by the one or more pieces of child sub-data [p0047, p0048 (Parent sub-data: HTML description, child sub-data: image elements 516, 518, and grand-child sub-data: image data corresponding to content ID in the second part 520.)].

Regarding claim 6 (currently amended), the rationale applied to the rejection of claim 2 has been incorporated herein. Wu et al further teach: The printing apparatus according to claim 2, wherein said determination unit is operable to determine whether or not there is the necessity only regarding the one-piece of parent sub-data [figs. 4-6 (Parent sub-data in terms of HTML page document is analyzed as illustrated in figs. 4-6.)]. Therefore, given Nishio's and Okigami's teaching on detecting duplicated data and eliminating re-transferring of repeated data, it would have been obvious for an ordinary skilled in the art to modify Wu et al's teaching to apply to HTML page document the technique of preventing repeated data transferring for saving memory space and improving printing speed.

Regarding claims 9 and 10 (currently amended), the rationale applied to the rejection of claim 2 has been incorporated herein. Wu et al further teach: The printing apparatus according to claim 2, wherein the one piece of parent sub-data is described in a markup language, and the one or more pieces of child sub-data is data except for the one piece of parent sub-data described in the markup language, wherein the one piece of parent sub-data is described in a hyper text markup language (HTML), and the one or more pieces of child sub-data includes one of image data and style information data [p0046-p0049].

Regarding claim 11 (currently amended), the method steps herein have been

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performed or executed by the corresponding apparatuses from claim 1. Therefore, claim 11 has been analyzed and rejected with regard to claim 1.

Regarding claim 12 (currently amended), the rationale applied to the rejection of claim 11 has been incorporated herein. Wu et al further teach: A computer-readable recording medium having a program recorded thereon, the program being used in the printing apparatus that receives, the print instruction, obtains the print data including the plurality of pieces of sub-data, and prints the obtained print data, the program causing a computer to execute the printing method of claim 11 [p0032].

4. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al (US Pub: 2004/0066530), Nishio (US Patent: 6,292,202), and Okigami (US Patent: 6,788,427); and in further view of Mackawa et al (US Pub: 2004/0201866).

Regarding claims 7 and 8 (currently amended), the rationale applied to the rejection of claim 1 has been incorporated herein. Nishio and Okigami do not specify a request to be received before notifying not to transfer duplicated data. Wu et al teach a pull-printing system for capable of doing so in [p0036] without detailed elaboration. In the same field of endeavor, Mackawa et al teach: The printing apparatus according to claim 1, wherein said notification unit is operable to notify the result of the determination by said determination unit, only when a request for a notification of the result of the determination is received from the print instruction apparatus, wherein said notification

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unit is operable to determine whether or not the print instruction includes the request for the notification of the result of the determination, and to notify the result of the determination, only when the request for the notification is included in the print instruction [p0100, fig. 1]. Sending information/notification from a printer only under request/instruction of a PC has been well practiced in the art as prescribed by Mackawa et al. Therefore, it would have been obvious for an ordinary skilled in the art to modify Nishio and Okigami's teaching to allow a request to be received first before determining the necessity of sending repeated data for providing user options for making different choices.

5. Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al (US Pub: 2004/0066530) and in further view of Okigami (US Patent: 6,788,427) and Hayashi (US Pub: 2002/0114007).

Regarding claim 13 (currently amended), Wu et al teach: A print instruction apparatus [fig. 2: unit 23] that instructs a printing apparatus [fig. 2: unit 22], via a communication interface connecting said print instruction apparatus and the printing apparatus, to print print data including a plurality of pieces of sub-data [Abstract], said print instruction apparatus comprising: a print buffer in which each of the plurality of pieces of sub-data is held [p0038, p0042]; a print data output unit operable to separately output, to the printing apparatus, each of the plurality of pieces of sub-data held in said print buffer [p0043]; a receiving unit operable to receive, from the printing apparatus, (i) a notification including that there is no necessity for the printing apparatus to further

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obtain a plurality of pieces of sub-data, in order for the printing apparatus to complete the printing of the print data [fig. 11: steps 1108, 1109], and (ii) a completion notification indicating that a print job is completed [p0097], and a deletion unit operable to delete, from said print buffer, the plurality of pieces of sub-data corresponding to the notification, when the notification is received [p0097, fig. 11: step 1111, fig. 13].

Wu et al do not explicitly disclose not obtaining already obtained/redundant sub-data. In the same field of endeavor, Okigami teaches: (i) an unnecessary notification including that there is no necessity for the printing apparatus to further obtain a same plurality of pieces of sub-data, in order for the printing apparatus to complete the printing of the print data, the same plurality of pieces of sub-data being identical to the plurality of pieces of sub-data output to the printing apparatus by said print data output unit abstract, col 2: lines 8-30]. Preventing transferring of redundant data has been well practiced in the art as prescribed by Okigami. Therefore, it would have been obvious for an ordinary skilled in the art to modify Wu et al's teaching to send notification or warning to a terminal device regarding repeated data for prevent re-transfer obtained data for improving image output control speed.

Wu et al do not disclose deleting data before completion of printing. Okigami further teaches: a deletion unit operable to delete, from said print buffer, the plurality of pieces of sub-data corresponding to the unnecessary notification, the plurality of pieces of sub-data being deleted before the completion notification is received from the printing apparatus [col 7: lines 49-60]. Deleting data before completion of printing is also disclosed by Hayashi in [p0078, fig. 5: step 7] from the same field of endeavor.

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Therefore, giving Okigami and Hayashi's teaching on deleting unnecessary data before the completion of a printing job, it would have been obvious for an ordinary skilled in the art to combine the teaching of all to delete unnecessary data before completion of printing for the purpose of freeing up memory space.

Regarding claim 14 (currently amended), the rationale applied to the rejection of claim 13 has been incorporated herein. Wu et al further teach: The print instruction apparatus according to claim 13, wherein the print data includes one piece of parent sub-data and one or more pieces of child sub-data referred to by the one piece of parent sub-data, wherein said print buffer only holds the one piece of parent sub-data from among the one piece of parent sub-data and the one or more pieces of child sub-data included in the print data, and wherein said deletion unit is operable to delete the one piece of parent data from said print buffer [p0035, p0037, p0039-p0041, figs. 3 and 4 (Stored HTML document data/parent sub-data only include referencing address or ID of content data/child sub-data which are stored in different place. Deletion of HTML document data does not delete the referenced data stored outside the printer.)].

Regarding claim 15 (currently amended), the method steps herein have been performed or executed by the corresponding apparatuses from claim 13. Therefore, claim 15 has been analyzed and rejected with regard to claim 13.

Regarding claim 16 (currently amended), the rationale applied to the rejection

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of claim 15 has been incorporated herein. Wu et al further teach: A computer-readable recording medium having a program recorded thereon, the program being used in the print instruction apparatus that instructs the printing apparatus to print the print data including a plurality of pieces of sub-data, the program causing a computer to execute the memory release control method according to claim 15 [p0032].

6. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al (US Pub: 2004/0066530) and in further view of Nishio (US Patent: 6,292,202), Okigami (US Patent: 6,788,427), and Hayashi (US Pub: 2002/0114007).

Regarding claim 17 (currently amended), Wu et al teach: A printing system that includes a printing apparatus and a print instruction apparatus [fig. 2], said print instruction apparatus [fig. 2: unit 23] instructing said printing apparatus [fig. 2: unit 22], via a communication interface connecting said print instruction apparatus and the printing apparatus, to print print data including a plurality of pieces of sub-data [Abstract], wherein said printing apparatus includes: a print data obtainment unit operable to obtain the plurality of pieces of sub-data separately from the print instruction apparatus [p0047]; a rasterizing unit operable to rasterize each of the plurality of pieces of sub-data obtained by said print data obtainment unit [p0008, p0010]; a determination unit operable to determine whether or not there is necessity of further obtaining of the sub-data, by said data obtainment unit, in order to complete printing of the print data [fig. 11: steps 1104, 1108]; and a notification unit operable to notify a result of the determination, to a print instruction apparatus which issues the print instruction, when

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the determination is made that there is no necessity [fig. 11: step 1108/No, 1109]; said print instruction apparatus comprising: a print buffer in which each of the plurality of pieces of sub-data is held [p0038, p0042]; a print data output unit operable to separately output, to the printing apparatus, each of the plurality of pieces of sub-data held in said print buffer [p0043]; a deletion unit operable to delete, from said print buffer, the plurality of pieces of sub-data corresponding to the notification, when the notification is received [p0097, fig. 11: step 1111, fig. 13].

Wu et al do not emphasize not to obtain already obtained/redundant sub-data. In the same field of endeavor, Nishio teaches: after the rasterizing unit starts to rasterize the plurality of pieces of sub-data and prior to the rasterizing unit completing the rasterizing of all of the plurality of pieces of sub-data, a determination unit operable to determine whether or not there is a necessity for said print data obtainment unit to further obtain a same plurality of pieces of sub-data, in order to said rasterizing unit to complete the rasterizing of all of the plurality of pieces of sub-data, the same plurality of pieces of sub-data being identical to the plurality of pieces of sub-data obtained by said print data obtainment unit [col 16: lines 6-21, 57-67]. Preventing transferring of redundant data has been well practiced in the art as prescribed by Nishio. Therefore, it would have been obvious for an ordinary skilled in the art to combine the teaching of Wu et al and Nishio to prevent re-transfer obtained data for improving image output control speed.

Although Nishio does not explicitly prescribe notifying the determination to the print instruction apparatus, such notification would have been inherent feature of

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Nishio's teaching or the repeated data transmission would not have been prevented.

Nevertheless, in the same field of endeavor, Okigami teaches: a determination unit operable to determine whether or not there is a necessity for said print data obtainment unit to further obtain a same plurality of pieces of sub-data, in order to said rasterizing unit to complete the rasterizing of all of the plurality of pieces of sub-data, the same plurality of pieces of sub-data being identical to the plurality of pieces of sub-data obtained by said print data obtainment unit [col 7: lines 49-60]; a notification unit operable to notify a result of the determination by said determination unit to the print instruction apparatus, the result of the determination being notified to the print instruction apparatus when said determination unit determines that there is no necessity to further obtain the same plurality of pieces of sub-data [abstract, col 2: lines 8-30]; a receiving unit operable to receive, from said printing apparatus, the notification of the result of the determination by said determination unit [col 2: lines 16-21]. Therefore, it would have been obvious for an ordinary skilled in the art to modify the combined teaching of Wu et al and Nishio to send notification or warning to a terminal device regarding repeated data for preventing data transmission redundancy.

Wu et al and Nishio do not disclose deleting data before completion of printing. Okigami further teaches: a deletion unit operable to delete, from said print buffer, the plurality of pieces of sub-data corresponding to the unnecessary notification, the plurality of pieces of sub-data being deleted before the completion notification is received from the printing apparatus [col 7: lines 49-60]. Deleting data before completion of printing is also disclosed by Hayashi in [p0078, fig. 5: step 7] from the same field of endeavor.

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Therefore, giving Okigami and Hayashi's teaching on deleting unnecessary data before the completion of a printing job, it would have been obvious for an ordinary skilled in the art to combine the teaching of all to delete unnecessary data before completion of printing for the purpose of freeing up memory space.

Regarding claim 18 (currently amended), the method steps herein have been executed or performed by the corresponding apparatuses of claim 17. Therefore, claim 18 has been analyzed and rejected with regard to claim 17 and in accordance with Wu et al's further teaching on: a transferring step of separately transferring, to the printing apparatus, the plurality of pieces of sub-data held in a print buffer of the print instruction apparatus [p0035, p0036].

Conclusion

7. Applicant's amendment necessitated the new grounds of rejection presented in this Office Action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fan Zhang whose telephone number is (571) 270-3751. The examiner can normally be reached on Mon-Fri from 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark K. Zimmerman can be reached on (571) 272-7653. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Fan Zhang/

Patent Examiner

/Mark K Zimmerman/

Supervisory Patent Examiner, Art Unit 2625